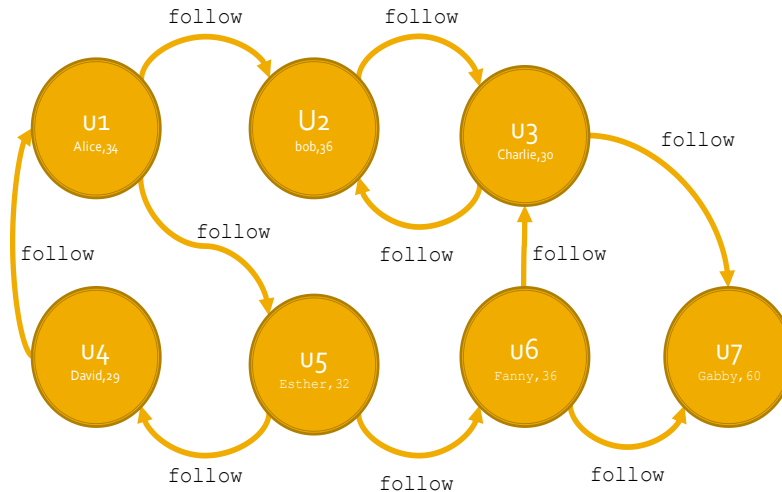


Distributed architectures for big data processing and analytics

Answer to the following questions. There is only one right answer for each question.

- (2 points) Consider the following graph and suppose g is its instantiation in GraphFrame.



Suppose the following command is executed on g .

```
motifs = g.find("(v1)-[]->(v2); (v2)-[]->(v3); !(v3)-[]->(v1)")
```

Which one of the following statements is **false**?

- One of the rows stored into the Dataframe motifs is

v1	v2	v3
[u3, Charlie, 30]	[u2, Bob, 36]	[u3, Charlie, 30]

- One of the rows stored into the Dataframe motifs is

v1	v2	v3
[u6, Fanny, 36]	[u3, Charlie, 30]	[u7, Gabby, 60]

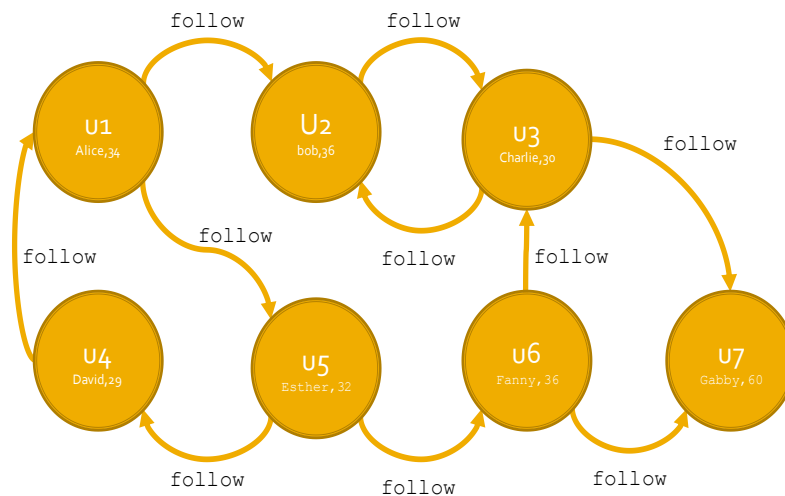
- One of the rows stored into the Dataframe motifs is

v1	v2	v3
[u2, Bob, 36]	[u3, Charlie, 30]	[u2, Bob, 36]

d) One of the rows stored into the Dataframe motifs is

v1	v2	v3
[u5, Esther, 32]	[u4, David, 29]	[u1, Alice, 34]

2. (2 points) Consider the following graph and suppose `g` is its instantiation in `GraphFrame`.



Suppose the following command is executed on `g`.

```
motifs = g.find("(v1)-[]->(v2); (v2)-[]->(v3); !(v2)-[]->(v1)")
```

Which one of the following statements is **false**?

a) One of the rows stored into the Dataframe motifs is

v1	v2	v3
[u6, Fanny, 36]	[u3, Charlie, 30]	[u7, Gabby, 60]

b) One of the rows stored into the Dataframe motifs is

v1	v2	v3
[u4, David, 29]	[u1, Alice, 34]	[u5, Esther, 32]

c) One of the rows stored into the Dataframe motifs is

v1	v2	v3
[u2, Bob, 36]	[u3, Charlie, 30]	[u7, Gabby, 60]

d) One of the rows stored into the Dataframe motifs is

v1	v2	v3
[u5, Esther, 32]	[u4, David, 29]	[u1, Alice, 34]